

Claim Amendments

Pursuant to 37 CFR 1.121(c), a complete listing of all claims in the application follows along with a parenthetical expression of the status of each claim. No new matter has been added.

Claims 1-22 (canceled)

23. (Currently amended) A plunger for a hydrocarbon well producing through a production string, said plunger comprising:

at least two separable plunger sections, each of said sections movable independently downwardly in said well;

said sections being latchable at a bottom of said well to enable said sections to move in unison upwardly in said well;

said latchment causing a continuous mechanized mating between said sections during lift from said well bottom, thereby preventing accidental separation; and

wherein said latchment is mechanically disengageable at a top of said well, thereby separating said sections to each commence a downward travel in said well and substantially in unison one with the other.

24. (Previously presented) The plunger of claim 23, wherein said latchment comprises a magnetic coupling.

25. (Previously presented) The plunger of claim 24, wherein one of said at least two sections further comprises an upper sleeve, and one of said at least two sections further comprises a lower plug, and wherein said lower plug comprises a magnet which couples said lower plug to an open end of said upper sleeve.

26. (Previously presented) The plunger of claim 25, wherein said lower plug further comprises a non-magnetic isolator, thereby improving said magnetic coupling between said lower plug and said upper sleeve.

27. (Previously presented) The plunger of claim 25, wherein said upper sleeve allows fluids to pass through its center in a downward travel in said well separately from said lower

plug, and wherein said lower plug prevents said fluids from passing through said sleeve center while said plug is coupled to said upper sleeve during lift.

28. (Previously presented) The plunger of claim 27, wherein said lower plug further comprises a ball made of ferrous material.

29. (Previously presented) The plunger of claim 23, wherein said latchment comprises a mechanical coupling.

30. (Previously presented) A multi-part, separable plunger assembly comprising:
a top mechanism comprising a female coupling means functioning to releasably secure a plug;
said plug mateable with the top mechanism coupling means to form a united plunger mechanism for upward movement in a well;
wherein said top mechanism comprises a bypass for fluids to pass through its center in a downward travel in the well separately from said mateable plug; and
wherein said mateable plug prevents said fluids from passing through said top mechanism center while said plug is coupled to said top mechanism during lift.

31. (Previously presented) The plunger assembly of claim 30, wherein said coupling means further comprises a mechanical pickup mechanism.

32. (Previously presented) The plunger assembly of claim 31, wherein said pickup mechanism comprises a spring-loaded retaining ball coupleable with a mating groove housed on a top end of said plug.

33. (Previously presented) The plunger assembly of claim 31, wherein said pickup mechanism comprises a spring-loaded retaining system latchable with a spherical plug sized for retention by said top mechanism.

34. (Previously presented) The plunger assembly of claim 31, wherein said pickup mechanism comprises a retaining groove mateable with a compression ring housed on a top end of said plug.

35. (Previously presented) The plunger assembly of claim 31, wherein said pickup mechanism comprises a flexible locking clamp system mateable with a top end of said plug.

36. (Previously presented) The plunger assembly of claim 31, wherein said plug further comprises a ball retainable in a flexible locking clamp system.

37. (Previously presented) The plunger assembly of claim 30, wherein said coupling means further comprises a magnetic latch mechanism.

38. (Previously presented) The plunger assembly of claim 37, wherein said coupling means further comprises a magnet latchable with a spherical plug sized for retention by said top mechanism.

39. (Previously presented) The plunger assembly of claim 31, wherein said pickup mechanism comprises a compression ring retaining system latchable with a spherical plug sized for retention by said top mechanism.

40. (Previously presented) A multi-part, separable plunger assembly comprising:
a sleeve with an open end;
said open end further comprising construction from a ferrous material;
a plug having a top, said plug top coupleable to said open end;
said plug further comprising a magnet; and
wherein said magnet couples said open end to said plug.

41. (Previously presented) The plunger of claim 40, wherein said plug further comprises a top having a removable cap for securing said magnet in a hollow in a plug body.

42. (Previously presented) The plunger of claim 41, wherein said hollow further comprises a non-magnetic isolator means functioning to radiate longitudinally a field of magnetic waves and improve a magnetic coupling between said plug and said open end.

43. (Previously presented) A multi-part plunger apparatus for a hydrocarbon well, said apparatus comprising:

a discrete bottom mechanism geometrically designed to quickly travel to a well bottom;

a discrete top mechanism having a bypass for fluids to pass therethrough during a downward travel to a bottom of the well;

said bottom and top mechanisms being latchable on contact with each other at the bottom of the well, thereby forming a non-discrete plunger unit in a magnetically latched state to move upwardly in the well during lift without separation; and

wherein said plunger unit is mechanically separated at a top of the well into said discrete bottom and top mechanisms.

44. (Previously presented) The apparatus of claim 43, wherein said bottom mechanism further comprises a magnet encased in an end adjacent to the top mechanism, thereby forming a magnet end.

45. (Previously presented) The apparatus of claim 44, wherein said top mechanism further comprises a ferromagnetic material to help produce a magnetic attraction to the magnet end of the bottom mechanism.

46. (Previously presented) A multi-part, separable plunger assembly comprising:
a sleeve means having a bottom orifice, said sleeve means functioning to allow fluids to pass through its center and assist said sleeve means in falling against an upward well fluid flow;
a plug means functioning to prevent the fluids from passing through the center of said sleeve means while said plug means is inserted into said bottom orifice of said sleeve means; and
a magnetic coupler means functioning to magnetically latch said sleeve means to said plug means.

47. (Previously presented) The plunger assembly of claim 46, wherein said sleeve means comprises a magnet and said plug means comprises a ferrous material.

48. (Previously presented) The plunger assembly of claim 46, wherein a top portion of said plug means comprises a magnet therein.

49. (Currently amended) A multi-part, separable plunger assembly comprising:
a plunger sleeve comprising an open end having a mechanical coupler means functioning to releasably secure a top of a plug means; and
said plug means functioning to mate with the sleeve mechanical coupler means and cause a closure of said open end, thereby preventing a bypass of fluids therethrough during plunger lift.

50. (Previously presented) The plunger assembly of claim 49, wherein said plug means further comprises a ball sized for retention by said sleeve.